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Foreign Documents Branch C I A Periodical Abstracts

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SCIENTIFIC

Number 56

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<u>Title</u>	<u>Issue</u>	<u>Date</u>
<u>Russian Periodicals</u>		
"Elektrichestvo" (Electricity) Cards 16-30, 69, 84	Vol LXVII No 1	Jan 1947
	No 2	Feb 1947
"Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva" (News of the All-Union Geographical Society) (2) Cards 71-78, 80-83	Vol LXXVIII No 3	Sep 1946
"Nauka i Zhizn'" (Science and Life) (3) Cards 1-4, 66-68, 70, 89-92, 95-98, 100	No 11	Nov 1947
	No 12	Dec 1947
	No 1	Jan 1948
"Stanki i Instrument" (Machine Tools and Instruments) Cards 31-65, 94	No 1	Jan 1947
	No 2	Feb 1947
	No 3	Mar 1947
	No 4	Apr 1947
	No 7	Jul 1947
	No 9	Sep 1947
"Trudy Instituta Geologicheskikh Nauk" (Works of the Institute of Geological Science) (1) Card 79	Vol LXXXVII No 25	1947
"Trudy Matematicheskogo Instituta imeni V. A. Steklova" (Works of the Mathematical Institute imeni V. A. Steklov) (1) Card 85	Vol XXII	Apr 1946
"Trudy Paleontologicheskogo Instituta" (Works of the Paleontological Institute) (1) Card 93	Vol XIII No 2	1946
"Uspekhi Khimii" (Progress of Chemistry) Cards 5, 86-88, 99	Vol XVI No 1	Jan 1947
	No 2	Feb 1947
"Zhurnal Analiticheskoy Khimii" (Journal of Analytical Chemistry) Cards 6-15	Vol II No 1	Jan 1947
	No 2	Apr 1947
	No 3	Jun 1947

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NOTE

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USSR/Astronomy Academy of Sciences		Nov 1947		USSR/Astronomy Meteors		Dec 1947	
"Gigantic Meteorite of 12 February 1947," V. G. Fesenkov, Academician, 6 pp				"The Cosmogonic Theory of Academician O. Yu. Shmidt," B. Yu. Levin, Candidate Phys-Math Sci, 5 pp			
"Nauka i Zhizn'" No 11				"Nauka i Zhizn'" No 12			
Describes expedition to site of crater made by meteorite. In Feb 1947 Academy of Sciences of USSR notified by Far Eastern branch, Vladivostok, that an enormous meteorite had fallen in Maritime taiga; foothills of Sikhote-Alinskiy mountain range, between Vladivostok and Khabarovsk.				Discusses Shmidt's cosmogonic theory, particular reference to formation of swarms of meteors which move round the sun in their own orbit and are involved in its galactic movement. Urges study of this theory by astronomers, mathematicians, physicists, and geologists to increase their knowledge of genesis and evolution of heavenly bodies.			
FDB		56T1		FDB		56T2	
USSR/Chemistry - Gas, Natural Chemistry - Fuel - Domestic Use		Dec 1947		USSR/Chemistry - Geochemistry Chemistry - Energy		Dec 1947	
"Use of Natural Gas" 1/2 p				"When Chemical Sciences Master the World," A. E. Fersman, Academician, 2 pp			
"Nauka i Zhizn'" No 12				"Nauka i Zhizn'" No 12			
Describes advantages of natural gas, and gives details of natural gas supply to towns of Buguruslan and Andizhan.				Discusses new sources of energy and other scientific marvels which may be developed in future. Forms one of chapters in late A. E. Fersman's popular-science book "Interesting Geochemistry."			
FDB		56T3		FDB		56T4	
USSR/Chemistry - Radicals Chemistry - Stability of Carbon - Theory		Jan 1947		USSR/Chemistry - Microchemistry Academy of Sciences		Apr 1947	
"Biradicals," M. Ye. Dyatkina, Ya. K. Syrkin, Moscow, 41 pp				"Resolutions of the Conference on Microchemistry," 3 pp			
"Uspekhi Khim" Vol XVI, No 1				"Zhur Anal Khim" Vol II, No 2			
Presents detailed discussion of chemical and magnetic data on biradicals, theory of biradicals, biradicals with heteroatoms, and triradicals. Discovery of triphenylmethyl type of free radicals suggests possible existence in one molecule of two or more trivalent carbon atoms, i.e., possibility of existence of biradicals, triradicals, etc.				Discusses 6-9 Dec 1945 session of Commission for Analytical Chemistry, Academy of Sciences, USSR. General discussion of development of science of microchemistry. Notes progress made in fields of organic and inorganic microchemistry. Discusses recommendations for training and ideas for development of new apparatus.			
AMC		56T5		AMC		56T6	
USSR/Chemistry - Calcium Chloride Chemistry - Electrolytes		Jan 1947		USSR/Chemistry - Benzene - Determination in Gases Chemistry - 1,3 - Butadiene		Jan 1947	
"Calcium Chloride as a Supporting Electrolyte," N. Ya. Khlopov, Molotov Oblast Sanitary Hygiene Lab, 5 pp				"Determination of Benzene in Gases Containing Butadiene and Higher Olefines; Relation of Butadiene-1,3 to the Ammonia Solution of Nickel Cyanide," A. A. Balandin, M. N. Marushkin, Inst Org Chem, Acad Sci USSR, 4 pp			
"Zhur Anal Khim" Vol II, No 1				"Zhur Anal Khim" Vol II, No 1			
Value of 30% solution of calcium chloride, as a supporting electrolyte, in determining small amounts of bismuth, copper, lead, cadmium, zinc and manganese. Change of the pH to 6.5 permits determination of lead in presence of small amounts of tin. High concentration of supporting electrolyte permits polarography without removal of oxygen. Method suitable for polar-				Tests of Dennis and MacCarty methods for determining benzene vapors in gases containing considerable concentrations of butadiene and butylenes. Butadiene			
AMC		56T7		AMC		56T8	

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FDB Periodical Abstracts Scientific No 56

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USSR/Chemistry - Calcium Chloride (Contd) Jan 1947

ographic analysis of foundry smoke, air in smoky regions, food products and any cases in which minute particles are involved.

AMC

56T7

USSR/Chemistry - Cerium
Chemistry - Rare Earth Metals

Apr 1947

"Separation of Cerium from the Rare Earth Metals by the Bromate-Pyridine Method," E. A. Ostroumov, All-Union Inst Mineral Raw Materials, Moscow, 7 pp

"Zhur Anal Khim" Vol II, No 2

Study of reaction of tetravalent cerium isolation in form of basic bromate. Separates cerium from rare earth metals by regulation of final pH of medium with buffer solution of pyridine hydrochloric salt. Method may be applied in analytical chemistry and to obtain pure cerium compounds.

AMC

56T9

USSR/Chemistry - Zinc - Determination
Chemistry - Colorimetry

Apr 1947

"Polarographic Determination of Zinc in Metallic Cadmium With Preliminary Separation of Cadmium by Means of Electrolysis on an Aluminum Cathode," P. N. Kovalenko, V. L. Dmitriyeva, State U, Rostov-on-Don, 8 pp

"Zhur Anal Khim" Vol II, No 2

Electroanalytic separation of cadmium from zinc carried out in 0.015 - 0.13 mole of a citrate buffer solution (pH 4.0 - 4.5, Voltage 0.90 - 1.1 V, temperature boiling point). Partly dissolved Al forms a complex compound and permits subsequent polarographic

AMC

56T11

USSR/Chemistry - Zinc - Determination
(Contd)

Apr 1947

determination of Zn. Zn determined in same residual solution by adding 5.0 to 10% ammonia and ammonium chloride.

AMC

56T11

USSR/Chemistry - Benzene - Determination Jan 1947
in Gases (Contd)

and butylene in considerable amounts are absorbed by an ammonia solution of nickel cyanide; therefore determination of benzene in presence of butadiene and butylene has been in error, i.e., too high. Apparently absorption due to formation of a soluble complex similar to insoluble and stable complex with benzene.

AMC

56T8

USSR/Chemistry - Aluminum - Determination Apr 1947
Chemistry - Colorimetry

"A Colorimetric Method for the Determination of Small Amounts of Aluminum in Beryllium Salts," R. V. Mervel', Inst Chem Reagents, Moscow, 8 pp

"Zhur Anal Khim" Vol II, No 2

Suggests simple rapid method of colorimetric determination of aluminum in form of oxochinolate extracted by benzene. If compared to aluminum solutions introduced into beryllium sulfate, in which Al content is less than sensitivity limit and iron content is not more than 0.01%, error of determination does not exceed 5%. If compared to aluminum

AMC

56T10

USSR/Chemistry - Aluminum - Determination Apr 1947
(Contd)

solutions introduced into water, error of determination does not exceed 25%. Method allows determination of from 0.002 to 0.5% of aluminum. Method requires one to one and a half hours.

AMC

56T10

USSR/Chemistry - Research
Chemistry - Colorimetry

Jun 1947

"Resolutions of the Conference on Colorimetric Methods of Chemical Analysis," 3 pp

"Zhur Anal Khim" Vol II, No 3

Briefly discusses proceedings of 18-21 Dec 1946, session of Commission on Analytical Chemistry, Academy of Sciences USSR, Moscow. First discusses proceedings in general, then describes particular work in field of research and development of new methods of analysis, and of new apparatus and equipment. Mentions literature on subject of analytical chemistry.

AMC

56T12

RESTRICTED	FDB Periodical Abstracts Scientific No 56	RESTRICTED
USSR/Chemistry - Ions Chemistry - Colors - Determination "Qualitative Detection of the Ions of Silver and Mercury, and Their Quantitative (Colorimetric) Determination," Ye. V. Vasil'yeva, 6 pp "Zhur Anal Khim" Vol II, No 3 Use of a faintly colored complex for qualitative and quantitative colorimetric determination of silver and mercury. May be determined also by the spot method on filter paper moistened with solution of the complex in acetone and dried. Gives sensibility of reactions, concentration limits and other data. Error in colorimetric determination of silver and mercury is 1 to 10%. AMC 56T13	USSR/Chemistry - Aldehydes - Determination Chemistry - Hydration "Polarographic Determination of Saturated and Unsaturated Aldehydes," M. B. Neyman, Inst Chem Phys, Acad Sci USSR; M. I. Gerber, Inst Chem, Gor'kiy State U, 12 pp "Zhur Anal Khim" Vol II, No 3 Shows by polarographic method that hydration of formaldehyde molecules occurs in aqueous solutions. Investigates dependence of hydration on temperature and calculates heat of hydration. Study of current-time dependence reveals that acrolein and croton AMC 56T14	
USSR/Chemistry - Geochemistry Chemistry - Concentration - Determination "A Computing Polarographic Method," Ya. P. Gokhshteyn, Lab Geochem Prob imeni V. I. Vernadskiy, Acad Sci USSR, 6 pp "Zhur Anal Khim" Vol II, No 3 Shows possibility of computing reduction in ion concentration after calculation of average constant of diffusion current. This conclusion may be applied only when a stronger electrolyte of type 1--1- or 2--1- valency is present in solution. AMC 56T15	USSR/Chemistry - Aldehydes - Determination (Contd) aldehyde are unstable in an alkaline medium. Acid medium most favorable for electroreduction of aldehydes with double bonds. AMC 56T14	
USSR/Electricity Electric Power Transmission Currents, Electric - Direct "Methods of Solving Some Basic Questions Concerning the Transfer of Energy by Means of a DC," Ya. M. Chervonenkis, Candidate Tech Sci, Energetics Inst imeni Krzhizhanovskiy, Acad Sci USSR, 12½ pp "Elektrichestvo" Vol LXVII, No 1 Reports series of studies and investigations conducted to determine practicability of transporting power over long distances by means DC. Discusses solution of problems by selection of circuit regulation, choice of AMC 56T16	USSR/Electricity Magnetic Currents Electromagnetism "Review of 'Magnetic Current and Its Conversion', by Academician V. F. Mitkevich," Prof Z. A. Tseytlin "Elektrichestvo" Vol LXVII, No 1 This book, published in 1946 by publishing house of Academy of Sciences, USSR, is a general account of work done by scientists in field of magnetic currents. Against formal methods in describing electromagnetic phenomenon, book upholds material and practical side of physics. Should prove helpful to AMC 56T17	
USSR/Electricity (Contd) conversion systems and changing generally utilized system of grounding neutral point of conversion systems. AMC 56T16	USSR/Electricity (Contd) scientists and technicians in field of electromagnetics. AMC 56T17	

RESTRICTED	FDB Periodical Abstracts Scientific No 56	RESTRICTED	
USSR/Electricity Generators, Power Synchronous Machines	Jan 1947	USSR/Electricity Power Plants, Electric Electromagnetism	Jan 1947
<p>"The Effect of the Moment of Inertia on the Stability of a Single Synchronized Generator," R. P. Zhezherin, Candidate Tech Sci, Energetics Inst imeni Krzhizhanovskiy, Acad Sci USSR, 1 1/2 pp</p> <p>"Elektrichestvo" Vol LXVII, No 1</p> <p>Can a single three-phase synchronized generator, having symmetrical loading with simple active resistances, operate constantly and steadily, and will the consequent moment of inertia be large or small? Author presents conditions for steady operation of a</p> <p>AMC 56T18</p>		<p>"Electromagnetic Processes in Powerful Rectifiers and Their Hookups in the Power Supply System," M. P. Kostenko, Corr Mem, Acad Sci USSR; Prof L. R. Neyman, Dr Tech Sci, Energetics Inst imeni Krzhizhanovskiy, Acad Sci USSR, and Leningrad Polytech Inst imeni Kalinin, 15 pp</p> <p>"Elektrichestvo" Vol LXVII, No 1</p> <p>Gives solutions of full differential equations for electromagnetic processes in rectifiers, and analysis of performance of rectifiers up to point of</p> <p>AMC 56T19</p>	
USSR/Electricity (Contd)	Jan 1947	USSR/Electricity (Contd)	Jan 1947
<p>generator supplied with a non-alternating current. States that unsteady operation of a synchronized generator (wobble) can be observed during period of very low revolution, e.g., when generator is starting.</p> <p>AMC 56T18</p>		<p>short circuit. Gives both exact and approximate analyses of current and voltage harmonics in DC and AC circuits. Discusses results of experiments conducted by authors in laboratory on powerful mercury rectifier apparatus which confirmed their theories.</p> <p>AMC 56T19</p>	
USSR/Electricity Hydroelectric Plants Electrical Equipment	Jan 1947	USSR/Electricity Transient Electrical Phenomena Cables - Insulation	Jan 1947
<p>"Installing the Electrical Parts of the Dnepr Hydroelectric Station imeni Lenin," Z. P. Chernogubovskiy, Candidate Tech Sci, DneproStroy, 10 pp</p> <p>"Elektrichestvo" Vol LXVII, No 1</p> <p>Discusses new equipment, characteristic of the principal electrical circuits of station, and describes important elements of electrical installations of Dnepr Hydroelectric Station, founded on high technical standards. All repair work being done in conformance with newest advances and developments.</p> <p>AMC 56T20</p>		<p>"Studying the Phenomenon of Ageing of Line Insulators," V. N. Titov, Candidate Tech Sci, Moscow Energetics Inst imeni Molotov, 1 1/2 pp</p> <p>"Elektrichestvo" Vol LXVII, No 1</p> <p>Gives basic facts concerning influence of voltage upon the ageing of line insulators. Conclusions drawn from experiments on line insulators obtained from KuzBass. Describes the experimental methods employed and briefly presents results.</p> <p>AMC 56T21</p>	
USSR/Electricity Circuits, Electronic Electromagnetism	Feb 1947	USSR/Electricity Earth - Electrical Properties Circuits, Ground	Feb 1947
<p>"Plans for the Substitution of Electrical Circuits by Magnetic Connections," P. A. Ionkin, Candidate Tech Sci, Moscow Energetics Inst imeni Molotov, 4 pp</p> <p>"Elektrichestvo" Vol LXVII, No 2</p> <p>Presents method to obtain 50 plans for substitution of various electromagnetic apparatus. Analysis of method shows simplification of study of electromagnetic systems.</p> <p>AMC 56T22</p>		<p>"Research on Grounds in Poorly Conducting Soils," Lecturers A. L. Vayner, A. K. Potuzhnuy, S. M. Fertik, Candidates Tech Sci, Kharkov Electrotech Inst, 8 pp</p> <p>"Elektrichestvo" Vol LXVII, No 2</p> <p>Presents results of experiments on leakage of ground impulse currents in poorly conducting soils. Studies tubular, circular and extended grounds. Determines magnitude of impulse coefficients of grounds and coefficients for single electrodes in</p> <p>AMC 56T23</p>	

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USSR/Electricity Heating, Industrial Heating, Electric "Experiments in the Application of the New Iron-Chrome-Aluminum Alloys for Heating Elements," Prof I. I. Kornilov, Engr R. S. Mints, A. A. Azovskaya, Inst Gen and Inorg Chem, Acad Sci USSR, 2½ pp "Elektrichestvo" Vol LXVII, No 2 Experiment in application of alloys No 1 and 2 (EI-340, EI-341 and EI-292), for heaters of high-temperature industrial furnaces, completely confirms their high fire resistance. Alloys have properties distinct from Nichrome which must be studied in construction AMC	Feb 1947 56T24	USSR/Electricity (Contd) Feb 1947 system of multiple electrode ground. Recommends expedient types of grounds for poorly conducting soils. 56T23	
USSR/Electricity (Contd) of industrial and laboratory furnaces. Specific properties of alloys determine construction of heating elements, their arrangement in furnace and conditions of use. AMC	Feb 1947 56T24	USSR/Electricity Power Transmission, Electric Earth - Electrical Properties "Influence of the Earth on the Loss of Energy in Perpendicular Frames With Increased Frequency," Prof S. I. Tetel'baum, Dr Tech Sci; Lecturer A. B. Budnitskiy, Candidate Tech Sci; Lecturer V. G. Kholmiski, Candidate Tech Sci; Kiev Polytech Inst, 2 pp "Elektrichestvo" Vol LXVII, No 2 In considering possibility of use of high-frequency network for underground transit systems, losses due AMC	Feb 1947 56T25
USSR/Electricity Cables, High Voltage Power Transmission, Electric "High-Voltage Cable Lines in Power Systems," Prof S. M. Bragin, Dr Tech Sci, Moscow Energetics Inst imeni Molotov, 7 pp "Elektrichestvo" Vol LXVII, No 2 Examines conditions determining possible use of high-voltage cable lines in power systems and long lead-in lines with increased voltage to consumer in order to guarantee a higher level of power supply and, at the same time, an economy of electrical power. Present AMC	Feb 1947 56T26	USSR/Electricity (Contd) Feb 1947 to influence of earth must be determined. Said losses measured in perpendicular wire frames 2 x 10 meters placed in earth at different depths and on surface at various heights. 56T25	
USSR/Electricity (Contd) article directly connected with data previously published on lowering loss of power and increasing voltage in electrical networks. Gives fundamental technical-economic indexes for accepted models of high-voltage cables and designates fields for application of high-voltage cable in power supply. AMC	Feb 1947 56T26	USSR/Electricity Machines, Induction Circuits, Magnetic "The 'Marginal Effect' in Induction Machines With Interrupted Magnetic Circuit," Prof G. I. Shturman, P. L. Aronov, Doctors Tech Sci, 5½ pp "Elektrichestvo" Vol LXVII, No 2 Evaluates electromagnetic processes in operation of asynchronous motors having curved and flat stators. Mentions factors determining currents of secondary circuit of a machine. As a result of mechanical analysis of systems developed, describes AMC	Feb 1947 56T27

RESTRICTED	FDB Periodical Abstracts Scientific No 56	RESTRICTED
USSR/Electronics Rectifiers, Selenium Industrial Equipment "Selenium Rectifiers," V. G. Komar, Candidate Tech Sci, Moscow Energetics Inst imeni Molotov, 9 pp "Elektrichestvo" Vol LXVII, No 2 Selenium rectifiers, new branch of electrotechnics, found wide application in industry and technology. Reviews important results of study and development of selenium tubes showing level reached by world and Soviet science in this field. Lists advantages of use of selenium rectifiers. Formulates fundamental scientific research and production problems. AMC 56T28	USSR/Electricity (Contd) Feb 1947 forces of interaction of air gap flux with currents of primary and secondary circuits. With data, illustrates changes in electromechanical properties of asynchronous motor as a result of interrupted magnetic circuit. AMC 56T27	
USSR/Electronics Crystals, Piezoelectric Transducers, Crystal "Piezoelectric Crystals and Their Application," N. N. Andreyev, Corr Mem, Acad Sci USSR, Phys Inst imeni Lebedev, Acad Sci USSR, 9 pp "Elektrichestvo" Vol LXVII, No 2 Examines properties and possible practical application of piezoelectric crystals. Discusses general theory of linear piezoelectric crystals and its application to piezoelectric pressure receivers. Describes new receiver models, among them a measuring hydrophone AMC 56T29	USSR/Electronics Television - Transmission Television - Projection Jan 1947 "Contemporary Television," V. L. Kreytser, Candidate Tech Sci, Leningrad Inst Communications Engineers, 8 pp "Elektrichestvo" Vol LXVII, No 1 Recently television emerged from laboratory stage, revealing progress and developments of applied science and technology. Discusses basic difficulties and problems of present-day television. In particular describes a highly sensitive trans- AMC 56T30	
USSR/Electronics (Contd) Feb 1947 with a tourmaline piezoelectric crystal in a plexiglass case, developed in Acoustical Laboratory of FIAN. AMC 56T29	USSR/Electronics (Contd) Jan 1947 mitting apparatus. Suggests solutions for large screen, and transmission of natural colors. Describes special uses of television, including broadcasting. AMC 56T30	
USSR/Engineering Machines, Drilling and Boring Pumping Machinery "From the Work of the ENIMS" $\frac{1}{2}$ p "Stanki i Instrument" No 1 Gives information on various reports including: "The Boring of Steel," E. M. Morozov, and R. Florensov; "Diffused Chromium Plating," F. R. Florensov; "Account of Test of Centrifugal Pumps for Supplying Coolants," N. R. Niberg and Yu. Z. Zaychenko; "Vertical Centrifugal Pumps With Electric Motors," N. Ya. Niberg; "Construction of Honing Heads for Special Purposes," AMC 56T31	USSR/Engineering Machinery, Screw Cutting Lubricating Oil - Viscosity Jan 1947 "Use of Low-Viscous Sulfonated Lubricating Oil When Thread Cutting," O. M. Burylova, $\frac{1}{2}$ p "Stanki i Instrument" No 1 Discusses disadvantage of other types of lubricant and claims that use of sulfonated oil over a period of 5 years has given good results; also very cheap. AMC 56T32	

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USSR/Engineering (Contd) Jan 1947	USSR/Engineering Machinery - Construction Tools, Cutting Jan 1947	
B. T. Breyev; "Radial-Plunger Rotation Pumps Type 'Oyl'gir' for Water Supply to Machine Tools," G. I. Kamentskiy.	"New Construction of Cutters for Rapid Cutting," F. V. Shtennikov, 1½ pp	
	"Stanki 1 Instrument" No 1	
	Discusses a series of new-type cutters made from hard alloys by I. M. Neklepayov, Engineer. Includes description and results obtained by their use. Use of these cutters has obtained high rate of cutting from Keller duplicate-cutting machine tools.	
AMC 56T31	AMC 56T33	
USSR/Engineering Tools, Machine Hydraulic Machinery Jan 1947	USSR/Engineering Tools, Machine Machines - Construction Jan 1947	
"Present-Day Status of Hydraulic Machine Tools," I. Z. Zaychenko, 4 pp	"Soviet Machine-Tool Building in the New Five-Year Plan" 3 pp	
"Stanki 1 Instrument" No 1	"Stanki 1 Instrument" No 1	
Deals with hydraulic machine tools subdivided, according to their working cycles and operating conditions, into three groups: 1) polishing and honing tools; 2) drilling and boring, turning and cutting tools; 3) duplicating tools and servomotors.	Discusses two resolutions for machine-tool building adopted by Supreme Soviet of USSR for inclusion in Five-Year Plan 1946-50, namely, to reach production capacity of 94.8 thousand metal-cutting machine tools by end of Five-Year Plan, and to ensure production of new and technically more advanced forms	
AMC 56T34	AMC 56T35	
USSR/Engineering Metallurgy Sparks, Electric Feb 1947	USSR/Engineering (Contd) Jan 1947	
"Electric Spark Method of Processing Metals," B. R. Lazarenko, Candidate Tech Sci; I. I. Lazarenko, Engr, Stalin Prize Laureates, 5 pp	of high production machines such as multishafted assembly machine tools and automatic machine tools.	
"Stanki 1 Instrument" No 2		
Concludes article begun in "Stanki 1 Instrument" No 12, 1946. Describes, with sketches and diagrams, construction of electric spark machine tools; in particular, a contact-action perforating machine tool, a noncontact-action perforating machine tool, and a		
AMC 56T36	AMC 56T35	
USSR/Engineering (Contd) Feb 1947	USSR/Engineering Tools, Machine Machines, Metal Cutting Feb 1947	
machine tool for electrically sharpening cutting tools. Also describes basic technological characteristics of electric spark method of metal processing.	"In the Technical Council of the Ministry of Machine-Tool Building of the USSR" 1 p	
	"Stanki 1 Instrument" No 2	
	Contains information from following reports: "Basic Questions in the Theory of Machine Tools," V. D. Gorbunkov, Chief Constructor of plant imeni Ordzhonikidze; "Report on Installation of Duplicating Machines," N. I. Tselytin, Engineer; "Report on Electronic Control in Metal Cutting Machine Tools," V.P. Andryev, Candidate of Technical Sciences; "Report on Various Types of Lathes," Prof B. L. Boguslavskiy.	
AMC 56T36	AMC 56T37	

RESTRICTED	FDB Periodical Abstracts Scientific No 56	RESTRICTED	
USSR/Engineering Machines, Chucking Tools, Machine	Feb 1947	USSR/Engineering Machines, Screw Cutting Feed Regulators	Feb 1947
"Three-Cam Eccentric Chuck," Ya. Ya. Lyohagin, Engr, 1 p		"Accuracy of Combination Feed Units for Feeding Screw-Cutting Lathes," P. K., 2 pp	
"Stanki 1 Instrument" No 2		"Stanki 1 Instrument" No 2	
Author suggests use of a three-cam eccentric chuck for making eccentric parts on universal lathes, to save time and increase accuracy. Describes construction and operation of chuck.		Describes accuracy of machine tool DiP200 and type L feed unit from mathematical viewpoint.	
AMC	56T38	AMC	56T39
USSR/Engineering Machines, Polishing Machines, Screw Cutting	Feb 1947	USSR/Engineering Tools, Machine Machinery - Construction	Feb 1947
"Lathe and Polishing Equipment With a Roller Bearing," G. I. Priemskiy, V. F. Gushchin, Engineers, 8th State Planning Inst, 3 pp		"Assembly Machine Tools in Machine-Tool Construction," B. A. Shchukarev, Engr, Stalin Prize Laureate, 3 pp	
"Stanki 1 Instrument" No 2		"Stanki 1 Instrument" No 2	
Discusses, with aid of detailed sketches, advantages in use of roller bearings with certain parts, such as lathe chucks.		Describes new methods used for mass production of machine tools in "Krasnyy Proletariy" and "Stanko-konstruktsiya" plants. Includes sketches and diagrams of assembly machine tools in use and gives table of comparison of production time for old and new method.	
AMC	56T40	AMC	56T41
USSR/Engineering Factories Efficiency, Industrial	Feb 1947	USSR/Engineering Tools, Cutting Alloys, Hard	Mar 1947
"Through the Plants" $\frac{1}{2}$ p		"Electric Spark Grinding of Cutters With Plates Made From Hard Alloys," B. I. Zolotikh, Engr, 1 p	
"Stanki 1 Instrument" No 2		"Stanki 1 Instrument" No 3	
Lists seven instrument plants and describes recent products.		Describes an experimental electric spark grinding machine tool and its advantages over previous types, and includes sketches and a table of comparison of results obtained by ordinary and electric spark methods.	
AMC	56T42	AMC	56T43
USSR/Engineering Metals - Cutting Tools, Electric	Mar 1947	USSR/Engineering Burnishing, Electric Plating, Chromium	Mar 1947
"Technology of the Electric Cutting of Metals," D. T. Vasil'ev, Candidate Tech Sci, 7 pp		"Increasing Durability of an Instrument by Chromium Plating With Preliminary Electric Burnishing," G. E. Pochtar', A. M. Gur'yev, Engineers, $\frac{1}{2}$ p	
"Stanki 1 Instrument" No 3		"Stanki 1 Instrument" No 3	
Describes charging of condenser, time necessary to charge condenser, power of charge, productivity of one electric spark discharge, productivity and power of electric cutter, number of discharges in electric cutter, other methods of increasing productivity, electronic control of electric cutting.		Discusses electric burnishing, conditions under which electric burnishing takes place, type of tank and conditions for chromium plating. Describes durability experiments.	
AMC	56T44	AMC	56T45

RESTRICTED		FDB Periodical Abstracts Scientific No 56		RESTRICTED	
USSR/Engineering Collars Cutters	Mar 1947	USSR/Engineering Tools, Machine Hydraulic Machinery	Mar 1947		
"Original Adjustment of a Four-Shafted Automatic Machine," A. L. Seydman, Engr, 1 p		"Present-Day Status of Hydraulic Machine Tools," I. Z. Zaychenko, 7 pp			
"Stanki 1 Instrument" No 3		"Stanki 1 Instrument" No 3			
Describes methods of making bearing collars and cutters for four-shafted automatic machines, and discusses their operation. Includes sketches and diagrams.		Continues article begun in "Stanki 1 Instrument" No 1, 1947. Describes hydraulic pumps, feed supply, and systems for drilling and boring, turning, and cutting machine tools. Includes sketches and diagrams.			
AMC	56T46	AMC	56T47		
USSR/Engineering Tools, Cutting Mechanics, Applied	Mar 1947	USSR/Engineering Tools, Cutting Steel, Chromium - Silicon	Mar 1947		
"Plan of Optimum Mechanics of Lathe Metal-Cutting Machine Tools for Making Standard Parts," Prof A. V. Pankin, Dir Tech Sci, 7 pp		"Investigation of the Cutting Properties of Twist Drills Made From Chrome-Silicon Steel 9XS," B. I. Matveyev, Saratov Inst imeni M. I. Kalinin, 1 p			
"Stanki 1 Instrument" No 3		"Stanki 1 Instrument" No 3			
Describes analytical method of calculation, graphical method of calculation, plan of optimum mechanics, establishment of relationship between depth of cutting and diameter, plotting of graphical characteristics by means of a cyclogram, graphical characteristics, and possibility of modernizing machine tools. Types TN20, 26-162 K, and DiP200. AMC	56T48	Discusses use of chrome-silicon and other steels for making twist drills. Compares cutting properties and shows that chrome-silicon steel twist drills are of low durability.			
		AMC	56T49		
USSR/Engineering Metals - Cutting Tools, High Speed	Apr 1947	USSR/Engineering Tools, Cutting Plating, Chromium	Apr 1947		
"Power Used When Cutting Metals With High-Speed Friction Saws," N. I. Gorbатов, Candidate Tech Sci, 4 pp		"Chromium Plating of Cutting Instruments," Z. I. Fel'dshteyn, S. M. Korbman, Candidate Tech Sci; F. Ya. Pol'nyakova, Engr, 3 pp			
"Stanki 1 Instrument" No 4		"Stanki 1 Instrument" No 4			
Includes hypothesis of metal cutting with friction plates, power formula for metal cutting with friction plates, discussion on coefficient of useful efficiency of a plate, and experimental check of theoretical conclusions.		Discusses desirability of chromium plated cutting instruments, gives results of durability experiments on chromium plated instruments, and describes use of electric burnishing to prepare surface of instrument for chromium plating.			
AMC	56T50	AMC	56T51		
USSR/Engineering Tools, Cutting Tools, Machine	Apr 1947	USSR/Engineering Hydraulic Machinery Tools, Machine	Apr 1947		
"New Types of Metal-Cutting Machine Tools," S. M. Benin, Engr, Chief Constructor, Ministry of Machine-Tool Building USSR, 9 pp		"Present-Day Status of Hydraulic Machine Tools," I. Z. Zaychenko, 6 pp			
"Stanki 1 Instrument" No 4		"Stanki 1 Instrument" No 4			
Describes multicutting semiautomatic machine tools used in Moscow plant "Krasnyy Proletariy" for making railroad car axles, centering and cutting machine tools model 1830, kinematics of a machine tool, working cycle of a machine tool, construction of machine-tool mechanism. Includes sketches.		Concludes series begun in "Stanki 1 Instrument" No 1, 1947. Discusses machine tools with hydraulic duplicating apparatus and describes their principle and operation. Suggests future development of hydraulic machine tools and possible use. Includes sketches.			
AMC	56T52	AMC	56T53		

RESTRICTED		FDB Periodical Abstracts Scientific No. 56		RESTRICTED			
USSR/Engineering Tools, Machine Tools, Cutting		Apr 1947		USSR/Engineering Machinery - Supports Tools, Cutting		Apr 1947	
"New Machine Tools" 1½ pp				"A New Advance in Automatic Machine Technology," P. V. Klingert, Engr, ½ p			
"Stanki i Instrument" No 4				"Stanki i Instrument" No 4			
Contains description of lathe multicutting semiauto- matic machine tool, Model 1730; two-shafted surface- grinding machine tool, Model 3772; three-shafted plane-milling machine tool, Model 6643; and slot- cutting machine tool, Model 5617.				Describes, with aid of sketches, new method of moving the support of a single-shafted automatic machine to avoid interference with the cutting of a part. New method gives satisfactory results.			
AMC		56T54		AMC		56T55	
USSR/Engineering Metals - Cutting Steel, Cutting		Apr 1947		USSR/Engineering Engines - Production Automobiles		Jan 1947	
"Conference on Rapid Methods of Metal Cutting" 1 p				"In the Technical Council of the Ministry of Machine-Tool Building of the USSR" ½ p			
"Stanki i Instrument" No 4				"Stanki i Instrument" No 1			
Conference held in Leningrad, summer 1946, to hear reports from organizations investigating rapid meth- ods of metal cutting. Article contains information from following reports: "Investigation of Process of Steel Cutting," V. I. Tkachevskiy, Engineer; "Rapid Cutting of Light Alloys," A. N. Distolyator, Engineer; "The Working of Steel With Cutters, etc.," A. A. Blok,				Subjects, concerning automobile engine production, discussed at meeting of machine-tool building sec- tion include following recommendations: to inves- tigate possibility of arranging cutting machine tools in a single line, after boring machine tools; to examine question of installing automatic control			
AMC		56T56		AMC		56T57	
USSR/Engineering (Contd)		Apr 1947		USSR/Engineering (Contd)		Jan 1947	
Engineer; "The Rapid Drilling of Deep Holes in Steel With a Strength 340 HP."				devices for continuous lines; to investigate pos- sibility of setting up combined automatic line for drilling, boring, cutting, and turning; to estab- lish automatic line for preliminary grinding of cylindrical collars.			
AMC		56T56		AMC		56T57	
USSR/Engineering Tools, Machine Tools, Cutting		Jul 1947		USSR/Engineering Instruments - Industry Machines, Screw Cutting		Jul 1947	
"New Instruments and Apparatus," B.A. Kurenko, Engr, 6 pp				"The Instrument Industry in the New Five-Year Plan," N. S. Degtyarenko, 4 pp			
"Stanki i Instrument" No 7				"Stanki i Instrument" No 7			
Describes instruments and apparatus highly rated at All-Union meeting of constructor-toolmakers at Minis- try of Machine-Tool Building of USSR. Includes appa- ratus to control cutting by means of two thread roll- ers, apparatus for geometric control of a multiscrew threading instrument, a special measuring instrument, and various types of cutting heads.				Continues article begun in "Stanki i Instrument" No 6, 1947. Describes screw-cutting machine-tool heads, a gear-cutting instrument, and a special cutting instrument. Includes sketches of thread generating rollers, pipe-threading and tube-boring instruments, a pipe-threading head, and a coupling chuck.			
AMC		56T58		AMC		56T59	

RESTRICTED		FDB Periodical Abstracts Scientific No 56		RESTRICTED	
USSR/Engineering Tools, Cutting Tools, Machine	Jul 1947	USSR/Engineering Efficiency, Industrial Tools - Production	Sep 1947		
"New Types of Metal-Cutting Machine Tools," S. M. Benin, Engr, Chief Constructor, Ministry of Machine-Tool Building USSR, 8 pp		"Tool Production in the New Stalin Five-Year Plan," N. S. Degtyarenko, Engr, 2½ pp			
"Stanki 1 Instrument" No 7		"Stanki 1 Instrument" No 9			
Continues articles from "Stanki 1 Instrument" No 4 and 5, 1947. Describes multicutting semiautomatic machine tool 183A and includes information on its kinetics, working cycle, and construction of its automatic feed unit and supports.		First of series to appear on subject of tool and instrument production in Soviet Union during new Stalin Five-Year Plan. Discusses requirements in field of measuring instruments, suggesting that nomenclature of measuring instruments be increased. Suggests that instruments be modernized, and new			
AMC	56T60	AMC	56T61		
USSR/Engineering Tools, Cutting Machinery - Production	Sep 1947	USSR/Engineering (Contd)	Sep 1947		
"Productivity of Multicutting Machine Tools During the Cutting With Hard Alloy Tools," Ye. N. Malyuchkov, Candidate Tech Sci, 7 pp		indicators be developed to replace present ones. Gives little technical information, but mentions basic characteristics of some new instruments.			
"Stanki 1 Instrument" No 9					
Discusses one problem of machine-tool operation. Describes performance of a machine tool with its full complement of hard alloy cutting tools, and discusses its relation to production of each unit machine and reliability and stability of operation.					
AMC	56T62	AMC	56T61		
USSR/Engineering Surface Finishes Mathematics - Formulas	Sep 1947	USSR/Engineering Instruments, Measuring Computers, Surface	Sep 1947		
"Mechanism for Determining the Irregularity of Finished Surfaces," P. Ye. D'yachenko, Candidate Tech Sci, 4 pp		"New Measuring Device for Internal Surfaces," I. T. Uverskiy, Kalibr Works, 1½ pp			
"Stanki 1 Instrument" No 9		"Stanki 1 Instrument" No 9			
Presents several methods of guaranteeing that microgeometry of finished surfaces meets standards established by GOST 2789-45. Describes and explains formulas for calculating regularity of finished surfaces.		Gives basic facts regarding new internal surface measuring device, calibrated in both .01 and .002 mm, developed at Kalibr Works. Compares new device with some in current use, and with standards set by GOST.			
AMC	56T63	AMC	56T64		
USSR/Engineering Steel, High Speed Tools - Heat Treatment	Sep 1947	USSR/Engineering Regulators Dams	Nov 1947		
"New Technological Processes of Thermal Processing of Tools From High-Speed Steel and Their Substitution for Sharpening Operations," A. B. Frenkel', Engr, 1½ pp		"Automatics for Floodgates", ½ p			
"Stanki 1 Instrument" No 9		"Nauka i Zhizn'" No 11			
Engineer Krupennikov and his assistants at Moscow Automobile Works imeni Stalin perfected new method to correct faults of old method used at ZIS Works for thermal processing of high-speed steel tools. Author particularly stresses sharpening, and presents layout and types of apparatus required.		Short description of automatic system of controlling hydrotechnical junctions of Volgastroy by shut-off devices. Stalin prize of 50,000 rubles awarded to men who developed it.			
AMC	56T65	FDB	56T66		

RESTRICTED		FDB Periodical Abstracts Scientific No 56		RESTRICTED			
USSR/Engineering Plastics Synthetic Materials		Dec 1947		USSR/Engineering Coal Combustion, Incomplete		Dec 1947	
"New Materials," A. F. Buyanov, Engr, 7 pp				"An Efficient Method of Combustion for Pechora Coal" 2 p			
"Nauka i Zhizn'" No 12				"Nauka i Zhizn'" No 12			
Describes uses of plastic materials such as bakelite, synthetic resin, transparent plastics, polaroid, and luminous plastics. Enumerates other types of plastics of future importance. Includes diagram showing sources of raw material and production plans of synthetic resin and plastics.				Describes method of combustion for coal with a high clinkering capacity and advocates use of a grating with kindling wood.			
FDB		56T67		FDB		56T68	
USSR/Engineering Furnaces, Electric Arc Electrometallurgy		Feb 1947		USSR/Geography		Dec 1947	
"Some Questions on the Theory of Electric Arc Furnace," Prof S. I. Tel'nyy, Ural Industrial Inst imeni Kirov, 6 pp				"The Tula National Forest, a State Reservation," S. M. Preobrazhenskiy, Candidate Geog Sci, 4 pp			
"Elektrichestvo" Vol LXVII, No 2				"Nauka i Zhizn'" No 12			
Reviews fundamental questions in theory of electric arc furnace according to work conducted before war by Electrometallurgy Chair of Dnepropetrovsk Metallurgical Institute. Designates direction of further development in theory of arc furnace and formulates problems regarding introduction of technical methods of control. AMC		56T69		Gives historical survey of Tula National Forest, showing its great value to natural history and forestry. Includes description of forest flora and fauna, suggesting route to be taken from Moscow.			
FDB		56T69		FDB		56T70	
USSR/Geography Geology		Sep 1946		USSR/Geography		Sep 1946	
"Sketches of My Life," V. A. Obruchev, 12 pp				"List of the Founders, Honorary Members, and Trustees of the Geographical Council USSR," B. A. Val'skaya, 23 pp			
"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3				"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3			
This brief autobiography touches highlights of Obruchev's personal life and scientific career. At present he considers five problems of great importance: 1) loess as a self-forming type of soil, 2) past glaciation of Siberia, 3) tectonic structures of Siberia, 4) geology of gold deposits of Siberia, 5) ancient ages of Asia. Full account of his life published in Geological Series, Izvestiya Akademii Nauk SSSR, No 1, 1944. ID		56T71		Includes members from 1845 to 1945. Also lists members in various departments under authority of Geographical Society of USSR.		56T72	
FDB		56T71		ID		56T72	
USSR/Geography Toponymy		Sep 1946		USSR/Geography Geological Prospecting		Sep 1946	
"Review of 'Tibetan Toponymy', by A. V. Marakuyev," M. Murzayev				"Final Searches for Sannikova Land," D. B. Karelin, 2 pp			
"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3				"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3			
Book published by Polytechnical Institute imeni S. M. Kirov, Tomsk, 1945. First of a series of books and articles dealing with toponymy of Asia. ID		56T73		In 1810 Sannikov claimed to have sighted land north of Novo-Sibirskiye Islands. No one was able to locate this mysterious land. In 1881 Venette Island was discovered. In 1944, on authority of I. Papanin, Chief of the Main Northern Sea Route Administration, two flights made over so-called blank areas resulting in conclusion that there is no Sannikova Land. Chart shows search flights of planes that participated in this aerial survey. ID		56T74	
FDB		56T73		ID		56T74	

RESTRICTED		FDB Periodical Abstracts Scientific No 56		RESTRICTED	
USSR/Geography		Sep 1946	USSR/Geology		Sep 1946
"Birds of Kara-Bogaz," A. V. Samorodov, 1½ pp			Volcanology		
"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3			"25 February (1945) Eruption of the Volcano Avacha," S. N. Glavatskiy, I. I. Lagunov, Kamchatka Sec, Geog Soc USSR, 6 pp		
Presents additional data regarding bird life of Kara-Bogaz area, particularly along route from Kara-bogaz-gol Mountain to village of Sartas (Bek-Tash) via village of Bik-Dash. Expedition took place 3-27 Jun 1940.			"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3		
			Gives geographical location and structure of volcano and a short historical account of its activity. Discusses first, phenomena which lead to prediction of an eruption, then, actual eruption itself. One photographic plate shows four different stages of eruption. Concludes with description of crater after eruption.		
ID	56T75		ID	56T76	
USSR/Geology		Sep 1946	USSR/Geology		Sep 1946
Gravimetric Analysis			Hydrology		
"Gravimetry and the Shape of the Earth," P. M. Gorshkov, 18 pp			"The Geomorphology of Coastal Outcroppings of Rivers," V. A. Varsanof'yeva, 24 pp		
"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3			"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3		
Author compares gravimetry in Tsarist Russia and in Soviet Union. Briefly discusses gravimetry and geodetics in foreign countries, particularly the Scandinavian, and presents a good bibliography of Finnish books on various aspects of gravimetry. Discusses shape of earth with short account of problem of the ellipse in Soviet Union. Also presents number of			Study of regularities of coastal crags and cliffs has practical as well as theoretical value. In describing formation of coastal shears by rivers of Ural system, author discusses only those shears in immediate vicinity of rivers. Includes following basic factors: predominant factors in shaping coastal outcroppings; petrographic composition,		
ID	56T77		ID	56T78	
USSR/Geology (Contd)		Sep 1946	USSR/Geology (Contd)		Sep 1946
gravimetric points located in various places such as East Siberian Sea (30), Black Sea (134), Arctic Ocean (153), Yugorskiy Shar (2), etc. This article submitted and read before 17 Nov 1945 session of Scientific Seminar at Leningrad University.			structure and texture of rock; types of wind erosion; character of stratification; conditions for occurrence and relationship between rock and coast trends; development of a diacase; eolian erosion of cliffs; and basic types of coastal outcroppings.		
ID	56T77		ID	56T78	
USSR/Geology		1947	USSR/Hydrology		Sep 1946
Geological Prospecting			Bottoms, Ocean		
"Lithological Study of the Lower Portion of the Tartarian Deposits of the Volga Region Near Kazan," V. I. Danchev, 83 pp			"Submarine Valleys," L. S. Berg, 6 pp		
"Trudy Inst Geol Nauk" Vol LXXXVII, Geological Series No 25			"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3		
Lithological study of deposits of Tartarian age became especially important in connection with large-scale prospecting and research work conducted to expand raw material base in new eastern oil regions. Attempts to clarify continuity of sedimentation process of			Submarine valleys are of interest since they disclose former rivers and ocean currents. Names various types of submarine valleys that can exist. Presents some known facts about submarine valleys, drawing heavily from information available in US and English literature.		
IC	56T79		ID	56T80	

RESTRICTED	FDB Periodical Abstracts Scientific No 56	RESTRICTED
USSR/Geology (Contd)	1947	USSR/Hydrology
Tartarian deposits in near-Kazan Region and to show lithogenetic relationship between sedimentary formations of Tartarian and underlying rocks. Analysis reveals that chemical, granulometric and quantitative characteristics of rocks change gradually in passing from one petrographical type to another.		Sep 1946
		"Geomorphology of the Sea Bottom of East Asiatic Seas and the Distribution of Fresh Water Fishes," G. U. Lindberg, 22 pp
		"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3
		Author discusses results of studies he conducted in areas around basins of Khuan-khe, Suyfun, Amur, Penzhin, Anadyr, and Yukon Rivers, to obtain data on fauna and topography of these areas. Well illustrated with charts showing relief of basin territory of Okhotsk Sea rivers, Yellow and Japan Seas. Also lists various types of fishes observed.
LC	56T79	ID
USSR/Hydrology Hydrography	Sep 1946	USSR/Hydrology Meteorology
"Transformation of Atmospheric Showers in the Level of the Caspian Sea," F. I. Bydin, 3 1/2 pp		Sep 1946
"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3		"Zone of Marked Dessication of the Earth's Surface in the European Part of the USSR," M. D. Semenov-Tyan-Shanskiy (deceased), 4 pp
Basic source of water for rivers and lakes is precipitation from atmosphere, however there is always an unbalanced ratio between amount of precipitation and level of water bodies, particularly noticeable in case of large bodies of water. Author discusses relationship between amount of precipitation and changes in level of Caspian Sea. Submitted 21 Jun 1941 at		"Izv Vsesoyuz Geograf Obshchest" Vol LXXVIII, No 3
		States there is constant change in state of water. Because of variance between energies of sun and earth, more water is being used than is being replaced. Shows various formula and existing phenomena to point out that European part of Soviet Union is gradually drying up, clearly revealing effect of state of unbalanced energy.
ID	56T82	ID
USSR/Hydrology (Contd)	Sep 1946	USSR/Mathematics - Geometry Circuits, Electronic
State Hydrological Institute and 2 Nov 1945 at Section on Physical Geography of Geographical Society of USSR.		Feb 1947
		"Geometric Theory of Electrical Circuits," Prof E. A. Meyerovich, Dr Tech Sci, Energetics Inst imeni Krzhizhanovskiy, Acad Sci USSR, 10 pp
		"Elektrichestvo" Vol LXVII, No 2
		Development of general theory of electrical circuits in recent years clearly connected with introduction of geometric propositions. Attraction of geometers a favorable influence leading to formation of theory of electrical circuits in its contemporary form. Examines geometric properties
ID	56T82	AMC
USSR/Mathematics - Number Systems Mathematics - Function Theory	Apr 1946	USSR/Mathematics - Geometry (Contd)
"The Additive Theory of Prime Numbers," Loo-Keng Hua, 179 pp		Feb 1947
"Trudy Matematicheskogo Inst imeni V. A. Steklova" Vol XXII		of electrical circuits. Shows that transformation applied by G. Kron, with help of matrix of connection "C," corresponds to transmission from currents of a branch to contour currents of same plan. Gives general method of conversion from an equation of single circuit to equations of another circuit with same resistance.
Complex discussion of additive theory of prime numbers. Proves Vinogradov's mean-value theorem in one of chapters and enumerates possible applications to theory of ζ functions, distribution of primes, and lattice point theory.		
LC	56T85	AMC
		56T84

FDB Periodical Abstracts Scientific No 56		FDB Periodical Abstracts Scientific No 56	
USSR/Mathematics - Nomography Mathematics, Applied	Jan 1947	USSR/Medicine - Antibiotics Medicine - Penicillin	Jan 1947
"The Use of Nomographic Methods in Physical Chemistry," G. V. Vinogradov, Moscow, 17 pp		"Some Antibiotics," I. Ya. Postovskiy, N. P. Bednyagina, Sverdlovsk, 26 pp	
"Uspekhi Khim" Vol XVI, No 1		"Uspekhi Khim" Vol XVI, No 1	
Mathematical discussion of study of functional relationships by nomograms, systematization of experimental data by nomograms, and intensification of processing results of observation by nomograms.		Discusses chemistry of antibiotics especially important from practical point of view, penicillin, gramicidin and streptomycin; also antibiotics which are very interesting chemically, patulin and allicin. Data published before Jun 1946 used in article.	
AMC	56T86	AMC	56T87
USSR/Medicine - Colloids Medicine - Fat	Feb 1947	USSR/Medicine - History Medicine - Public Health	Nov 1947
"Lyophobic Organic Colloids," Yu. M. Glazman, Kiev, 12 pp		"Medical Science in Moscow for 30 Years," I. D. Strashun, Active Mem, Acad Med Sci USSR, 5 pp	
"Uspekhi Khim" Vol XVI, No 2		"Nauka i Zhizn" No 11	
General considerations regarding nature of stability of lyophobic organic colloids make it possible to look upon all lyophobic colloidal systems, organosol and hydrosol, from a single point of view. Demands further development and proof and more experimental material dedicated to study of lyophobic organosols than exists at present time.		Presents historical account of work of People's Commissariat of Health, established in Moscow 21 Jul 1918, which since that time has founded various scientific and health institutes in Moscow.	
AMC	56T88	FDB	56T89
USSR/Medicine - History Medicine - Biology	Nov 1947	USSR/Medicine - Hybridity Medicine - Animals - Experimentation	Dec 1947
"Soviet Biology," A. F. Kleshnin, Candidate Biol Sci, 7 pp		"Hybridization of Animals at Askaniya-Nova," A. E. Mokeyev, Candidate Agr Sci, 4 pp	
"Nauka i Zhizn" No 11		"Nauka i Zhizn" No 12	
Elementary survey article on historical progress in study of biology in USSR.		Describes experiments in hybridization carried out by M. F. Ivanov at Askaniya-Nova on various animals including horses, oxen, sheep, camels, reindeers, and others. Advocates interspecies hybridization as method of facilitating planned system of agricultural economy.	
FDB	56T90	FDB	56T91
USSR/Medicine - Diving Diving Equipment	Dec 1947	USSR/Medicine - Flies Medicine - Evolution	1946
"Present Day Physiology and Diving," E. M. Krepe, D. A. Chetverikov, Acad Sci USSR		"The Evolution of the Wing and the Phylogeny of Oligoneura (Diptera, Nematocera)," B. B. Rodendorf, Paleontol Inst, Acad Sci USSR, 123 pp	
"Nauka i Zhizn" No 12		"Trudy Paleontologicheskogo Inst" Vol XIII, No 2	
Discusses reactions of human body under various diving conditions, different types of diving helmets, and treatment of divers' bends.		By comparison of principal (taxonomically important) characters of structure, development, and bionomics of early and recent Oligoneura, attempts to show different directions of specialization of their organs. Comparative morphological analysis of wings reveals a more perfect mode of flight in more recent groups.	
FDB	56T92	LC	56T93

FDB Periodical Abstracts Scientific No 56		RESTRICTED	
USSR/Metals Steel - Hardness Tests Low Temperature Research	Sep 1947	USSR/Minerals Mineral Deposits Geological Prospecting	Nov 1947
<p>"The Effect of Low-Temperature Annealing on the Mechanical Properties and Hardness of Type B 1 Steel," A. P. Garashchenko, Engineer, 2 pp</p> <p>"Stanki 1 Instrument" No 9</p> <p>Thermal treatment of instruments and tools after tempering is most inefficient. For proper thermal treatment of steel tools, important to know type and hardness of steel. After thermal treatment steel may be tested for static bending and percussion resistance. Low-temperature annealing of tools manufactured from AMC</p>		<p>"The Wealth of Mineral Resources of the USSR and Their Study for 30 Years," Prof V. A. Varsanof'yeva, Dr Geol Sci, 10 pp</p> <p>"Nauka i Zhizn'" No 11</p> <p>General survey of mineral wealth of USSR and methods of geological study. Written for popular consumption, presenting no details.</p>	
	56T94	FDB	56T95
USSR/Metals (Contd)	Sep 1947	USSR/Nuclear Physics Cosmic Radiation	Nov 1947
<p>carbon steel and steel alloy must be conducted at optimum temperatures for a long period of time to guarantee hardness, stability and wear resistance of tools.</p>		<p>"Cosmic Rays," N. A. Dobrotin, Dr Phys Math Sci, 2 pp</p> <p>"Nauka i Zhizn'" No 11</p> <p>Study of cosmic rays begun in Soviet Union 20 years ago by D. V. Skobel'tsyn. Notes briefly his work and that of S. N. Vernov, I. Ye. Tamm, L. D. Landau, S. Z. Belen'kiy, and A. V. Migdal.</p>	
AMC	56T94	FDB	56T96
USSR/Physics Dielectrics	Nov 1947	USSR/Radio Radio Waves - Propagation Radio Navigation	Nov 1947
<p>"Physics of Dielectrics for 30 Years," G. I. Skanavi, Dr Phys Math Sci, 2½ pp</p> <p>"Nauka i Zhizn'" No 11</p> <p>Brief elementary review of main achievements of Soviet scientists in field of dielectrics since A. F. Ioffe began work in that field in 1922.</p>		<p>"Soviet Radio Physics," A. M. Prokhorov, Candidate Phys Math Sci, 1 p</p> <p>"Nauka i Zhizn'" No 11</p> <p>Russia has occupied a leading place in the development of radio physics and radio technics, especially in the last 10-20 years. Comments briefly on study of propagation of radio waves, recent application of radio to geodesics and navigation, etc., in an elementary fashion.</p>	
FDB	56T97	FDB	56T98
USSR/Physics Resonance Mathematics, Applied	Feb 1947	USSR/Soil Science	Nov 1947
<p>"The Fundamental Principle and Fundamental Concepts of the Theory of Resonance," D. A. Bochvar, Moscow, 11 pp</p> <p>"Uspekhi Khim" Vol XVI, No 2</p> <p>Presents motives and postulation of problem of study in basic principle of theory of resonance with a discussion of generally accepted method of proving theory. Demonstrates theory mathematically.</p>		<p>"Our Soils and the Problems of Studying Them," L. I. Prasolov, Academician, 4 pp</p> <p>"Nauka i Zhizn'" No 11</p> <p>Gives brief one-page description of soils of Soviet Union and indicates general problems in their study.</p>	
AMC	56T99	FDB	56T100